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How Emotional Self-Control Relates to IT Mindfulness and Technostress in Students

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Abstract

Students in IT-intensive courses such as Introduction to MIS must learn new technologies in a short amount of time, similar to self-directed knowledge workers in a company. Technostress reduces employee performance, engagement and satisfaction, but how does it affect business students? Although emotional intelligence has profound effects on student outcomes, its relationship with technostress and IT mindfulness is unexplored. Instructors cannot design effective theoretically-based interventions without understanding the underlying problems that students are experiencing. To address this gap, this paper reviews current literature on these concepts and presents a research model to explore the effects of these relationships in business students taking the Introduction to MIS course. The proposed study will build on the existing model of IT mindfulness and technostress in order to explain the role of emotional self-control in the research model and to test which factors have the most significant effects on students. It contributes to research on IS education, IT mindfulness, technostress, and emotional self-control.

Keywords

IT mindfulness, technostress, MIS curriculum, Introduction to MIS, emotional self-control, TEIQue

Introduction

Technostress, or the stress caused by information and communication technologies (ICTs), has been repeatedly shown to negatively affect organizational outcomes such as job satisfaction, performance, and organizational citizenship, costing companies up to $500 billion per year (Weir, 2013). Research addressing technostress to improve outcomes can help employee engagement, retention and productivity, but do these relationships apply equally to students in technology-intensive courses? And if they do, how can instructors develop effective interventions to address these issues? Furthermore, will this training persist once students become full-time employees? It is a relatively well-established practice to use IS students as proxies for full-time employees in IS research, but little technostress research has considered whether students themselves experience technostress from technology-intensive courses, and if so, to what extent? The Introduction to MIS course forces students to use and study new and unknown IT tools; being forced to rapidly learn new technology can cause technostress in employees. Ergo, does the Intro to MIS course cause technostress in business students, especially non-MIS majors? Technostress reduces satisfaction and engagement in employees, but do these effects also hold for students? Considering that business students are current and future business professionals, it logically follows that they too experience technostress. However, unlike employees in a relatively stable and fixed job, students enter college expecting to be challenged and to learn new skills. Perhaps technostress is not so much a factor. If technostress affects business students, in order to design effective interventions, we need to first test the research model to identify one or more significant antecedents.

A new construct, IT mindfulness, can attenuate the effects of technostress in business professionals (Ioannou & Papazafeiropoulou, 2017), but what about in business students? Is this the best factor to address or are there more significant antecedents of technostress, such as emotional self-control? What is the relationship of emotional self-control to IT mindfulness and technostress? We ask these questions with the ultimate goal of determining the best way to design effective interventions in the Introduction to MIS class. We chose this course because it is technology-intensive and as a result, non-IS business students often struggle with it. Numerous studies have asked how the Intro to MIS course can be taught

better, but few if any of these suggestions are based on a theoretical understanding of how the technology-intensive nature of the course creates technostress. In preparation for designing and testing interventions, in this study, we first measure the effects of emotional self-control, IT mindfulness and technostress on students taking the Intro to MIS course. The next sections briefly review the literature on technostress, IT mindfulness, and emotional intelligence, followed by the research model and proposed study to be conducted on business students taking an undergraduate Intro to MIS course. It is one part of a larger study to address how emotional intelligence can be addressed in IS curricula, which it is hoped will increase empathy and tolerance for others, and by so doing, improve IS outcomes in the field at large. This paper contributes to research on IT mindfulness, technostress and emotional self-control.

Theoretical Background

In a general sense, a traditional student entering college is similar to a novice, self-directed worker. They do not know what they don't know; they must set and determine their individual workloads without a micromanager telling them what to do or when; and they are expected to navigate new terrain and learn new technology and work-life skills, in addition to mastering new material. They are under extreme pressure to succeed in a short amount of time, and in today's universities, many students must also work full or part-time jobs in addition to taking a full schedule of classes (15 to 18 credits). Business students at AACSB-accredited universities usually complete a course titled Introduction to Management Information Systems ("Intro to MIS"), which foists on them a plethora of changing technologies and systems, some familiar, some foreign. IS academics regularly discuss challenges of this course, including how to increase engagement, participation and satisfaction, particularly for non-IS students, who often dislike being forced to work with and learn about IT. Suggestions include active learning, flipped classrooms, cooperative learning, simulations, etc., but none of these are a panacea (Aytes & Byers, 2005; Gudigantala, 2013; Mukherjee & Bleakney, 2017). Most solutions rely on theories of learning rather than testing for an underlying problem. For non-MIS students, the Intro to MIS course can be especially challenging, and sometimes even intimidating. At some schools, it's used to recruit MIS majors (Firth, Lawrence, & Looney, 2008; Whelan & Firth, 2012), and at most schools, this course has a heavy technology component that may require students to learn how to use databases, spreadsheets, programming, and ICTs to succeed in the course. Each and all of these technologies can cause technostress individually, and here students experience all of these technologies in a single course. To what extent is this course causing technostress and how can it be addressed? The next section defines technostress and discusses its role in the research model.

Technostress

Technostress is defined as "stress brought about by computer technologies in organizations" (Caro & Sethi, 1985, p. 292). It is "a perceived, dynamic adaptive state between the person and the environment", (Caro & Sethi, 1985, p. 292), i.e., it is malleable and based on perception, and therefore, trainable. This concept has been slowly gaining momentum since coined by Brod (1982) and further explicated by Caro & Sethi (1985). As computer technologies networked people together, over time, the definition of technostress was further expanded by Ragu-Nathan, Tarafdar, Ragu-Nathan & Tu (2008) to address the stress caused by ICT's. The concept of technostress also covers strain caused by the need to constantly adapt to new and changing technologies. Although technology has been causing stress since PCs entered the general workforce in the early 1980s, these problems are far from resolved (Tarafdar, Cooper, & Stich, 2017). Technostress still reduces employees' commitment and job satisfaction and increases turnover intentions (Fuglseth & Sørebø, 2014; Kumar, Lal, Bansal, & Sharma, 2013; Tarafdar, Tu, & Ragu-Nathan, 2010). Technostress should not be confused with techno-phobia (fear of computers), computer anxiety, or computer self-efficacy, which are distinct concepts. Technostress is comprised of techno-inhibitors and creators. The five technostress creators increase technostress. They are overload, invasion, complexity, insecurity and uncertainty. These techno-creators designate the ways in which the technology makes people feel; that they must be more productive, constantly available to work, inept or unskilled at using the technology, apprehensive about becoming unemployed, and constantly adapting to change (Ragu-Nathan et al., 2008, p. 426). Techno-inhibitors reduce technostress. Ragu-Nathan, et al. (2008) identified three techno-inhibitors, namely, technical support provision, literacy facilitation, and involvement facilitation. Inhibitors can be provided by the organization to better support employees. Ioannou &

Papazafeiropoulou (2017) put forth IT mindfulness for consideration as a fourth techno-inhibitor, because it reduced technostress in a sample of 440 working professionals.

Few if any studies have considered how the growing need to use and learn new technology affects college students. A review of the literature yielded no results on whether technology-intensive courses affect student technostress, although there are plenty of studies about college students coping with general feelings of stress, not specifically technostress, and those studies focus on general outcomes, not course-related outcomes. For example, Goddard (2011) considered the effect of technostress on college students' depression; Balance & Rogers (1991) found that students in a 2-year technical college experienced "computer hassles" but it did not affect GPA; and Shepherd (2008) identified technostress in business faculty. To bridge the research on employees and students, this paper adapts the classic technostress model to the context of IS education. The research model here is expanded to an IS classroom as though it were an "organization" and tested for similarities and differences. In so doing, it may become possible to design more effective interventions to help students cope with the Intro to MIS course.

IT Mindfulness

IT mindfulness is a "dynamic, IT-specific trait, evident when working with IT, whereby the user focuses on the present, pays attention to detail, exhibits a willingness to consider other uses, and expresses genuine interest in investigating IT features and failures" (Thatcher, Wright, Sun, Zagenczyk, & Klein, 2018). According to Ayyagari (2007), when individuals view technology as "beneficial, then they are more tolerant towards those technologies" and increased tolerance reduces stress (p. 148). Considering the technology-intensiveness of the Intro to MIS course, high IT mindfulness in students would be ideal. However, this research is too nascent to begin designing interventions, until it is first established whether students experience technostress and if so, what role IT mindfulness plays in this context. Further, although the concept of IT mindfulness was derived from general mindfulness, research has not considered whether IT mindfulness has similar effects as general mindfulness related to IT. By extension, it is also unknown how IT mindfulness relates to emotional intelligence, particularly when people experience technostress.

Emotional Intelligence / Emotional Self-Control

Emotional intelligence ("EI") is "a set of skills hypothesized to contribute to the accurate appraisal and expression of emotion in oneself and in others, the effective regulation of emotion in self and others, and the use of feelings to motivate, plan, and achieve in one's life" (Salovey & Mayer, 1990). This broad classification has been further categorized into Ability EI, a performance trait measured through maximum-performance tests, and Trait EI, which consists of behavioral dispositions and self-perceptions, measured through self-report questionnaires (Cooper & Petrides, 2010; Kostantinos V. Petrides, Pita, & Kokkinaki, 2007). In this paper, we focus on Trait EI. As of 2008, over 950 papers were published on the topic of emotional intelligence (Stough, Saklofske, & Parker, 2009) and many more in the decade since then. The roles of EI in stress and coping responses in college students has been considered, but not with technology in the mix (Alumran & Punamäki, 2008; Saklofske, Austin, Mastoras, Beaton, & Osborne, 2012). EI plays an important role in an educational context, but studies of EI are limited in IS research. Cotler, DiTursi, Goldstein, Yates & Del Belso (2016) improved EI with general mindfulness training and emotional detection in a college class, in both face-to-face and online classes. Slaski & Cartwright (2003) improved employees' EI through training in the workplace, but the training had no effect on job performance, likely because the measures used for performance did not capture emotional effects. An alternative explanation for these weak effects and limited findings may be that not all factors of emotional intelligence are equally influential on perceived stress.

Of the four factors that compose Trait EI (emotionality, sociability, well-being, and self-control), the potentially most influential factor is emotional self-control, which is composed of three facets: stress management, impulsiveness (low), and emotion regulation. In a primary educational setting, effortful self-control (measured differently from Trait EI self-control) was shown to improve performance (Liew, 2012). We theorize that post-secondary students with greater Trait EI self-control should have increased IT mindfulness, and by extension, reduced technostress. Those with less technostress should report greater satisfaction with an IT-intensive course, and they should then be more inclined to engage and

participate in the course. If so, then effective interventions should address emotional self-control as opposed to IT mindfulness or other technostress inhibitors.

Theoretical Model and Proposed Research Study

In the interests of space, we present the research model in Figure 1. This model is an extension of Ioannou & Papazafeiropoulou (2017).

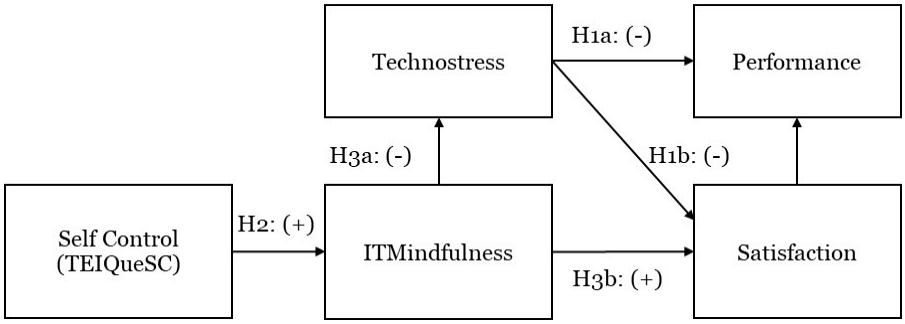

Figure 1. Research Model
(adapted from Ioannou & Papazafeiropoulou (2017).

The preliminary hypotheses are as follows:

H1a: Students with greater technostress will experience lower performance in the course compared to students with lower technostress.

H1b: Students with greater technostress will report lower satisfaction compared to students with lower technostress.

H2: Greater self-control will be associated with greater IT mindfulness.

H3: IT mindfulness will (a) reduce experienced technostress and (b) increase course satisfaction.

Next steps are to validate the model through surveys on sample populations of students in the Introduction to MIS courses at two mid-sized universities. This data will be collected and tested in Fall 2019.

Conclusion

This paper discussed prior research on technostress, IT mindfulness, and emotional intelligence, in order to build a new research model to explain how they affect students taking a technology-intensive course such as Introduction to MIS. Although technostress has been found to reduce employee job satisfaction and performance, its effects on students are less known. Furthermore, it has not been established whether IT mindfulness is related to emotional intelligence the same way as general mindfulness is, and if so, what role emotional intelligence plays in the research model of technostress and IT mindfulness. This paper proposed a study to test a new research model within a new context, IS education. Based on prior studies, the results of this study are anticipated to shed light on potential ways to increase student satisfaction with the Introduction to MIS course and their performance and engagement in the course. If the course causes technostress in students, which can be reduced by increased IT mindfulness and greater emotional self-control, then perhaps MIS instructors can design more successful interventions.

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